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1. Switch-Based Technology Solutions

Switch-based solutions, such as MNLS, rely on a functionality that is intrinsic to TDMA — the measurement of the strength of signals from the serving cell and neighboring cells.⁶² This information is then relayed to the network where software algorithms, which rely on a database comprised of real-world signal strength measurements, are used to determine the caller's location.

a. Accuracy

Although these solutions do not yet meet the FCC's accuracy requirements, they provide a significant improvement over Phase I location information and provide accuracy comparable to other full network solutions trialed by Cingular. According to AT&T, its switch-based technology, MNLS, can offer accuracy of 250 meters for 67 percent of 911 calls and 750 meters for 95 percent of all such calls.⁶³ Ericsson recently indicated that it has a switch-based solution that can produce approximately 250 meter accuracy for 67 percent of calls.⁶⁴ Cingular is actively working with vendors who claim that these accuracies can be improved. Trials of similar switch-based technologies for commercial location-based services produced even greater accuracy on GSM networks in Italy. Cingular is working with vendors in an effort to port this technology to TDMA networks in the United States and, at a minimum, expects the accuracy of switch-based solutions to substantially improve over time. Based on all of

⁶² A description of this technology is contained in the attached Letter from Mikael Stromquist, Vice President and Chief Technical Officer, Ericsson, to Bobby K. Adams, Executive Director — Intelligent Networks Products and Services, Cingular Wireless LLC (June 27, 2001) (Attachment I) (“Stromquist MNLS Letter”).

⁶³ AT&T Waiver at 13.

⁶⁴ Stromquist MNLS Letter at 6.

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these promising developments, Cingular has actively pursued switch-based technologies as the best available solution for providing Phase II location information over its TDMA networks with the goal that these solutions may ultimately achieve full compliance.

b. Speed of Deployment

In addition to being “reasonably accurate,” another benefit of switch-based solutions is that they can be deployed much faster than other network-based location technologies because they do not require the installation of base station hardware. Upon grant of the waiver, Cingular will immediately commence the development of the databases necessary for a switch-based solution. Then, once its switch-vendors supply software upgrades, Cingular will be able to deploy the switch-based location technology. Cingular expects that the necessary software upgrades for its Ericsson switches by fourth quarter 2001⁶⁵ and for all its other TDMA switches (Lucent and Nortel) by late 2002.⁶⁶ This schedule would enable Cingular to complete deployment in select markets by early 2002 and to complete Phase II deployment by late summer 2003 in markets where there are valid PSAP requests. Cingular is working with these vendors to accelerate this schedule.

⁶⁵ *Id.* at 1.

⁶⁶ Letter from Steve McNitt, Wireless Strategy Director, Nortel Networks, to Evans Roberts, Cingular Wireless (July 3, 2001) (concerning Nortel Networks’ TDMA based E911 Phase II core technology) (Attachment I).

2. Full Network Technology Solutions

Like switch-based technology solutions, full network technology solutions cannot strictly meet the FCC's accuracy requirements. Full network solutions have an additional shortcoming — they cannot be deployed rapidly or ubiquitously across a market.

a. Accuracy

As discussed above, Cingular has tested all available types of full network solutions — TDOA, AOA, RF Mapping, and combinations thereof. These tests demonstrated that no full network solution could strictly meet the FCC's accuracy requirements for Phase II location information.

b. Speed of Deployment

The full network solutions tested by Cingular required complex, time consuming installations. All full network solutions would require the installation of a Location Monitoring Unit ("LMU") at every cell site.⁶⁷ In some cases, the full network solution requires the installation of more LMUs than a carrier has cell sites. Even if a carrier has the requisite number of cell sites for LMU installation, most sites do not have the necessary cabinet space or power and cooling resources necessary to accommodate an LMU. Thus, new cabinets would need to be added to these sites.

Many of these modifications may be precluded or substantially delayed by zoning, tower capacity issues, or the need to modify tower leases.⁶⁸ Based on Cingular's experience, it would take

⁶⁷ See Deployment Time Line Estimation for Network Based E911 Phase II Solutions at 4 (Attachment E).

⁶⁸ Declaration of William Clift at 1-2 (Attachment G) ("Clift Declaration"); accord AT&T Waiver at 9 (indicating that "the zoning necessary for the placement of AOA antennas [required by some network-
(continued...)

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up to one year to complete deployment of a full network solution in a single, sizable market, even without inevitable zoning delays.⁶⁹ Because full network solutions require the addition of antennas, zoning approval must be obtained. In a nationwide deployment involving multiple carriers, zoning delays of one year are likely.⁷⁰ Given the complexity of these installations, Cingular believes that it is impossible for a vendor to deploy a full network solution simultaneously over all of Cingular's networks. Conversely, switch-based solutions can be fully deployed over multiple markets per month and can be fully deployed by August 31, 2003. Cingular will phase-in deployment, beginning in markets with outstanding PSAP requests.

IV. WAIVER REQUEST

There is no technology available for deployment on the GSM and TDMA air interfaces utilized by Cingular which would fully comply with the requirements set forth in Section 20.18. Accordingly, Cingular seeks a waiver that would permit it to deploy the following Phase II location technologies: (i) the E-OTD solution for its GSM networks; and (ii) a switch-based location technology on its TDMA networks that has the potential to improve on recently reported test results for MNLS. These

⁶⁸ (...continued)

based solutions] typically requires a minimum of five months (four months of zoning clearance and one month for securing the necessary building permit)"); AT&T and Grayson Wireless Joint *Ex Parte* Presentation, CC Docket No. 94-102 (June 5, 2001).

⁶⁹ See Deployment Time Line Estimation for Network Based E911 Phase II Solutions at 8-11 (Attachment E).

⁷⁰ See *id.* at 8.

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technologies satisfy the Commission's mandate to rapidly deploy reasonably accurate location information when there is no solution available that strictly meets its accuracy and deployment criteria.⁷¹

A. Grant of the Waiver is Warranted Because the Circumstances Are Unique and the Public Interest Would be Served

The circumstances underlying Cingular's waiver request are unique. Cingular was only recently created and immediately began making a critical air interface decision — whether to convert its TDMA networks to a different air interface, such as GSM or CDMA. This migration decision cannot be made quickly because it is one of the most critical operational decisions facing a CMRS carrier. Cingular has devoted substantial resources to this decision and is in the midst of planning the transition of its TDMA networks to a new air interface.

Moreover, there is no technology currently available that would provide Phase II location information for the GSM and TDMA air interfaces utilized by Cingular with the accuracy required by the Commission's rules.⁷² In addition to accuracy shortcomings, currently available technologies simply cannot be deployed consistent with the deadlines contained in Section 20.18.

1. GSM Networks

As stated above, Cingular plans on satisfying its Phase II obligations by deploying an E-OTD handset-based solution for its GSM networks. Most other GSM operators are deploying E-OTD. Thus, if Cingular deployed a network-based solution, Phase II location information would be unavailable for its subscribers roaming on GSM networks utilizing E-OTD.

⁷¹ *Fourth MO&O*, 15 F.C.C.R. at 17458.

⁷² Clegg Declaration at 1-2.

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Although the availability of handsets is largely beyond Cingular's control, Cingular is confident that E-OTD-compliant handsets can be deployed at the following rate:

- one entry-level handset model will be available by October 1, 2001;
- 25% of all handsets sold by December 31, 2001;
- 40% of all handsets sold by March 31, 2002;
- 65% of all handsets sold by June 30, 2002;
- 100% of all handsets sold by September 30, 2002.

This deployment schedule applies to handsets sold to new subscribers. In addition, Cingular has an attractive upgrade plan that encourages subscribers to upgrade handsets every two years, thus facilitating E-OTD deployment to the existing subscriber base. Historically, for every five new subscribers, one existing subscriber upgrades a handset. Thus, Cingular will likely roll out E-OTD handsets at a much faster pace than set forth above, which already exceeds the FCC's required deployment rate.⁷³

A waiver is necessary, however, because E-OTD is unlikely to meet the FCC's accuracy requirements prior to October 1, 2001. A number of other GSM carriers have expressed similar opinions and requested waivers.⁷⁴ Because Cingular is not the developer of E-OTD technology and cannot commit to the pace at which the technology's accuracy will improve, Cingular seeks a conditional waiver of the FCC's accuracy requirements. Pursuant to this waiver, Cingular would initially deploy an E-OTD solution capable of supplying accuracy of 100 meters/67 percent of the time

⁷³ See 47 C.F.R. § 20.18(g).

⁷⁴ *Fourth MO&O*, 15 F.C.C.R. at 17463 (granting a waiver to VoiceStream); Carolina PCS Waiver at 4; AT&T Waiver at 4-6.

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and 300 meters/95 percent of the time.⁷⁵ Cingular expects that the accuracy of its E-OTD solution will improve to a level that meets the current requirements for handset-based solutions by October 1, 2003.⁷⁶

A waiver also is necessary because an E-OTD solution requires a limited number of switch software and hardware upgrades that cannot be started until 2002. Ericsson has indicated that the modifications necessary to update its infrastructure will be available late first quarter 2002⁷⁷ and Cingular's other GSM infrastructure vendor, Nortel, has indicated that its upgrades will be available in May 2002.⁷⁸ Cingular respectfully requests a waiver that would allow six months from the availability of software and hardware upgrades to complete the necessary modifications, resulting in a projected deployment date no later than December 2002 in markets with outstanding PSAP requests for Phase II ALL.⁷⁹

⁷⁵ See *Fourth MO&O*, 15 F.C.C.R. at 17463-64.

⁷⁶ See *id.* at 17464.

⁷⁷ Letter from Mikael Stromquist, Vice President and Chief Technical Officer, Ericsson, Inc., to Kris Rinne, Vice President, Technology and Product Realization, Cingular Wireless LLC (June 25, 2001) (Attachment I).

⁷⁸ Letter from Steve McNitt, Wireless Strategy Director, Nortel Networks, to Evans Roberts, Cingular Wireless (July 3, 2001) (concerning Nortel Networks' GSM based E911 Phase II core technology) (Attachment I).

⁷⁹ Cingular recognizes that its E-OTD solution results in handsets being deployed before the infrastructure capability is in its switches. There normally would be risk associated with this type deployment. Such risk is mitigated here, however, because the handset/infrastructure interface will have been tested using alternative means to ensure interoperability. Any E-OTD handsets and infrastructure elements that Cingular deploys will comply with that tested interface.

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In addition to deploying E-OTD, Cingular proposes a “safety net” location technology solution similar to the NSS solution proposed by VoiceStream whereby GSM subscribers without E-OTD handsets could be located within a radial accuracy of 1000 meters for 67 percent of calls. This will ensure that location information is available for the embedded GSM base. Deployment of this solution can commence in first quarter 2002, and can be fully deployed by second quarter 2002.

Grant of the requested waiver would serve the public interest by: (i) eliminating any uncertainty surrounding whether the solution chosen by Cingular satisfies the FCC’s rules; (ii) permitting Cingular to move forward with the deployment of the only viable GSM solution; and (iii) ensuring that Cingular’s subscribers have access to Phase II location information when roaming.

2. TDMA Networks

With regard to TDMA networks, Cingular has been unable to substantiate vendor claims that a solution exists for providing Phase II E911 location information in full compliance with the FCC’s rules. All of the TDMA “solutions” previously pursued by Cingular either fell short of the accuracy requirements or could not be deployed by October 1, 2001 because of their complexity and time-intensive construction requirements. Moreover, even assuming *arguendo* that some of these solutions did comply with the Commission’s rules, it would cost approximately 950 million dollars to deploy a network-based solution over Cingular’s TDMA footprint.⁸⁰ This cost estimate is conservative, however, because even TruePosition has noted that there may be a greater than 1:1 ratio for LMUs

⁸⁰ See Clift Declaration at 1-2 (referring to the attached Deployment Cost Estimation for Network-Based E911 Phase II Location Technology Solutions, Attachment F at 2 (July 5, 2001)).

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and base stations in rural areas.⁸¹ The Commission has previously recognized that cost is a relevant factor in choosing a Phase II solution.⁸² The cost of the network-based solutions previously tested by Cingular is particularly troublesome because none of them fully complied with the Commission's rules.

The uncertain timing associated with Cingular's plans to migrate from TDMA networks, as well as the fact that there is no fully compliant Phase II solution, compel Cingular to propose the deployment of a switch-based location technology on its TDMA networks. This approach will produce accuracy equal to or better than that produced by MNLS. Although a switch-based solution is unlikely to strictly meet the FCC's Phase II accuracy requirements, Cingular expects that such a solution will closely approximate these requirements and can be deployed more quickly than any other solution.⁸³

Cingular is in the process of selecting a vendor for supplying a switch-based Phase II solution. Immediately upon grant of this request, Cingular will begin building the databases that are a necessary component of any switch-based solution. Cingular's initial database targets will be in markets where there are outstanding PSAP requests more than six months old and where the switch modifications will be completed first. Accordingly, Cingular requests a waiver of Section 20.18(f) that would permit it to deploy a switch-based solution as follows:

⁸¹ TruePosition *Ex Parte* Presentation, CC Docket No. 94-102, at 3 (July 24, 2000).

⁸² *Fourth MO&O*, 15 F.C.C.R. at 17463.

⁸³ *See id.* at 17458.

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- By June 30, 2002,⁸⁴ or within 6 months of a PSAP request, whichever is later, 100 percent of Cingular's coverage area served by an Ericsson switch will have access to Phase II location information;⁸⁵ and
- By February 28, 2003,⁸⁶ or within 6 months of a PSAP request, whichever is later, 100 percent of Cingular's coverage area served by all other switches (Lucent and Nortel) will have access to Phase II location information.⁸⁷

The public interest will be served by extending the Phase II E911 implementation deadline in this manner because the waiver will permit Cingular to deploy a Phase II solution for its TDMA networks more quickly than and at a fraction of the cost of the other "solutions."⁸⁸ The primary public interest benefit of this solution is that it covers the entire embedded TDMA base immediately upon deployment. Conversely, denial of the waiver may force Cingular to choose a more expensive network-based "solution" — one that fails the FCC's accuracy requirements — that will take considerably longer to deploy on its TDMA networks than the proposed switch-based technology.

It is anticipated that the switch-based Phase II solution would merely be a temporary bridge between Cingular's existing TDMA networks and a new air interface. When Cingular makes this transition, it will endeavor to ensure that the new networks are fully compliant with the Commission's Phase II requirements from the outset. Accordingly, once the transition is complete, Phase II location

⁸⁴ Assuming a valid PSAP request was submitted at least six months prior to this date.

⁸⁵ See Attachment E.

⁸⁶ Assuming a valid PSAP request was submitted at least six months prior to this date.

⁸⁷ See Attachment E.

⁸⁸ Of course, as stated above, there is no current solution with respect to GSM networks that can be implemented prior to October 1, 2001.

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information should be immediately available from Cingular⁸⁹ upon PSAP request. Cingular will keep the Commission informed of its air interface transition and any potential impact on Phase II deployment.

B. Grant of the Waiver Is Warranted Because No Other Reasonable Alternatives Are Available

As discussed above, granting the requested waivers is warranted because there are no other reasonable alternatives. The Commission has already recognized that there is no solution for providing Phase II location information on GSM networks with the accuracy required by Section 20.18 prior to the Phase II implementation deadline.⁹⁰ Moreover, despite claims of vendors to the contrary, Cingular has been unable to verify the existence of a Phase II solution for its TDMA networks that can meet the FCC's accuracy requirements or be deployed prior to October 1, 2001.⁹¹ The public interest would not be served by requiring Cingular to purchase a network-based solution that (i) takes longer to deploy than Cingular's proposed solution and (ii) does not meet the Commission's accuracy requirements on TDMA networks that likely have a limited life expectancy.

As the record clearly indicates, Cingular is not alone in its determination that there are no technologies currently available to supply Phase II location information in accordance with the Commission's rules:

⁸⁹ Although Phase II location information would be immediately available from Cingular's networks, the timing for PSAP receipt of this information will be impacted by any modifications that may be required or facilities that must be provisioned to deliver the Phase II location information from the Cingular network to the PSAP.

⁹⁰ *Fourth MO&O*, 15 F.C.C.R. at 17461-62.

⁹¹ Clegg Declaration at 1-2.

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- The Commission has acknowledged that E-OTD is the only available “solution” for GSM networks and that this technology does not meet the accuracy requirements specified in Section 20.18.⁹²
- AT&T has concluded that a fully compliant Phase II solution does not exist;⁹³
- VoiceStream recently stated that “no vendor can provide A-GPS or TOA technology for its GSM networks in sufficient time to meet the Commission’s E911 requirements.”⁹⁴
- ALLTEL reviewed numerous Phase II technologies and identified deficiencies with virtually every one.⁹⁵ Although it tentatively concluded that an “Assisted GPS” handset-based solution was the most feasible, it acknowledged that handsets may not be available in sufficient numbers to satisfy the Commission’s deployment requirements.⁹⁶
- FindComm, Inc. — a wireless location technology company — has described the location technology industry as “offering fragmented and incomplete solutions.”⁹⁷
- Motorola, Nokia, and Ericsson have recognized that handset/GPS solutions still require developmental work and have criticized Qualcomm’s claims as “skimming over

⁹² *Fourth MO&O*, 15 F.C.C.R. at 17461-62. Importantly, although the Commission granted VoiceStream a waiver to deploy this technology, VoiceStream has subsequently questioned the viability of this technology. See *PCS One E911 Phase II Carrier Report*, CC Docket No. 94.102, at 6 (Nov. 9, 2000).

⁹³ See *AT&T Wireless Services, Inc. E911 Phase II Report*, CC Docket No. 94-102, at 4-5, 10 (Nov. 9, 2000).

⁹⁴ *VoiceStream Ex Parte Presentation*, CC Docket No. 94-102, at 2 (Feb. 5, 2001).

⁹⁵ *ALLTEL Communications, Inc. E-911 Phase II Technology Report*, CC Docket No. 94-102, at 5-7 (Nov. 9, 2000).

⁹⁶ *Id.* at 9.

⁹⁷ *FindComm, Inc. Ex Parte Presentation*, CC Docket No. 94.102, at 1 (Sept. 1, 2000).

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differences in air wireless interfaces, overly generalizing, overstating capabilities, and exaggerating development progress. . . .”⁹⁸

- SnapTrack, Inc. demonstrated that network-based solutions “are not ready, and may be cost-prohibitive.”⁹⁹
- Handset vendors have indicated that they will not be developing solutions for TDMA handsets.¹⁰⁰

The only evidence in the record indicating that Phase II solutions are available now are the statements of vendors — and even they dispute the viability of network-based solutions and vice versa depending upon the product they offer. Carriers meanwhile have been unable to substantiate that either type of solution will actually provide Phase II location information pursuant to the specifications set forth in Section 20.18. Nonetheless, Cingular believes that location vendors continue to strive to develop solutions that would fully satisfy the FCC’s requirements.

The Commission's Phase II E911 rules currently cannot be met by CMRS carriers. These rules require carriers to deploy location technologies pursuant to a specific deployment schedule, and specify the accuracy of these systems. At the time the rules were adopted, there was no technology that satisfied the requirements. The Commission envisioned, however, that the technology would develop in time to satisfy the rules. This has not happened. Many vendors claim that they have compliant solutions, but none of these claims has proven true in real-world testing. Thus, carriers are

⁹⁸ Motorola, Nokia, and Ericsson *Ex Parte* Presentation, CC Docket No. 94-102, at 3 (Aug. 18, 2000).

⁹⁹ SnapTrack, Inc. *Ex Parte* Presentation, CC Docket No. 94-102 (May 5, 1999); SnapTrack *Ex Parte* Presentation, CC Docket No. 94-102, at 2 (June 2, 1999).

¹⁰⁰ See Nokia Letter at 1; Motorola Letter at 1; Panasonic Letter at 1.

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faced with the following choice: deploy a Phase II solution based on vendors' claims or seek a waiver.

This is a nearly impossible choice.

If a carrier deploys a Phase II solution based on vendor claims, and the solution does not meet the Commission's requirements once deployed, the carrier — not the vendor — will in all probability be the focus if enforcement action is taken. In order to get a waiver, however, the Commission has indicated that CMRS carriers should demonstrate a path to full compliance. Carriers cannot make such a showing, however, because the technology does not exist and carriers are not in the business of developing technology solutions. Thus, carriers cannot satisfy the rules and, although they can satisfy the waiver standard set forth in the Commission's rules, cannot realistically demonstrate the path to full compliance that the Commission has requested with Phase II waiver requests. Compliance is simply beyond carriers' direct control.

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CONCLUSION

For the foregoing reasons, there is good cause to grant the instant waivers so that Cingular can deploy the following Phase II solutions: EOTD for its GSM networks and a switch-based solution similar to MNLS for its TDMA networks. These solutions comply with the Commission's mandate of reasonable accuracy and rapid deployment.

Respectfully submitted,

CINGULAR WIRELESS LLC

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Its Attorneys

July 6, 2001

ATTACHMENT A

Cingular Wireless, LLC Subsidiaries

Cingular Wireless LLC
BellSouth Cellular National Marketing, LLC
BellSouth Mobility LLC
Acadiana Cellular General Partnership (RSA's No. 5 & 6)
Alabama Cellular Service, LLC
Huntsville MSA Limited Partnership
American Cellular Communications LLC
Anniston-Westel Company, LLC
Atlanta-Athens MSA Limited Partnership
Cingular Real Estate Holdings of Atlanta, LLC
Bakersfield Holdings, LLC
BCTC of Texas, LLC
Indiana 8, L.L.C.
Georgia Cellular LLC
Atlanta-Athens MSA Limited Partnership
Cingular Real Estate Holdings of Atlanta, LLC
Georgia Cellular Holdings, LLC
Atlanta-Athens MSA Limited Partnership
Cingular Real Estate Holdings of Atlanta, LLC
Indiana Cellular LLC
Jackson Holdings, LLC
Jackson Acquisitions LLC
Jackson Cellular LLC
MCTA
Westel-Indianapolis LLC
Bloomington Cellular Telephone Company
BSCC Cellular of Indiana, L.P.
Westel-Milwaukee Company, LLC
BSCC Cellular of Indiana, L.P.
Cingular Westel Real Estate Holdings, LLC
Westel Richmond, LLC
Orlando SMSA Limited Partnership
Memphis SMSA Limited Partnership
Tennessee RSA Limited Partnership
BellSouth Mobility Communications, LLC
B-Side Carriers L.P.
BellSouth Wireless LLC
Cellemetry LLC
Cellular Radio of Chattanooga
Chattanooga MSA Limited Partnership
Century Cellunet of North Louisiana Cellular Limited Partnership
Chattanooga CGSA, LLC
Chattanooga MSA Limited Partnership
Cingular Real Estate Holdings of Georgia, LLC

Decatur RSA Limited Partnership
Florida Cellular Service, LLC
Jacksonville MSA Limited Partnership
Florida RSA No. 2B (Indian River) Limited Partnership
Georgia RSA No. 1 Limited Partnership
Georgia RSA No. 2 Limited Partnership
Georgia RSA No. 3 Limited Partnership
Jackson Acquisitions LLC
Jackson Cellular LLC
MCTA
Kentucky CGSA, LLC
Cingular Real Estate Holdings of Kentucky, LLC
Louisiana CGSA, LLC
BSCC of Louisiana, LLC
Louisiana Cellular Holdings, L.L.C.
Cingular Real Estate Holdings of Louisiana, LLC
Lafayette MSA Limited Partnership
Louisiana Cellular Holdings, L.L.C.
Louisiana RSA No. 8 Limited Partnership
Louisiana RSA No. 7 Cellular General Partnership
Memphis CGSA, LLC
Memphis SMSA Limited Partnership
Tennessee RSA Limited Partnership
M-T Cellular, LLC
Northeastern Georgia RSA Limited Partnership
Northeast Mississippi Cellular, LLC
Orlando CGSA, LLC
Orlando CGSA Holdings, Inc.
Orlando SMSA Limited Partnership
Memphis SMSA Limited Partnership
Tennessee RSA Limited Partnership
Orlando SMSA Limited Partnership
Memphis SMSA Limited Partnership
Tennessee RSA Limited Partnership
South Carolina Cellular Service, LLC
Chattanooga MSA Limited Partnership
MCTA
BellSouth Personal Communications, LLC
BellSouth Carolinas PCS, L.L.C.
Cingular Real Estate Holdings of the Southeast, LLC
Cingular Interactive L.P.
Houston Cellular Holding Company (Tex), LLC
Houston Cellular Telephone Company, L.P.
Galveston Cellular Partnership
Galveston Cellular Telephone Company
Huntsville Cellular Telephone LLC

Huntsville MSA Limited Partnership
Salmon PCS LLC
SBC International Puerto Rico, Inc.
Cellular Communications of Puerto Rico, Inc.
CCPR, Inc.
CCPR of the Virgin Islands, Inc.
CCPR Paging, Inc.
CCPR Services, Inc.
CCPR Telecommunications Inc.
San Juan Cellular Telephone Company
Merrimack Telecommunications Corporation
San Juan Cellular Telephone Company
San Juan Cellular Telephone Company
SJCT, Inc.
San Juan Cellular Telephone Company
USVI Cellular Telephone Corporation
SBC Wireless LLC
@Track Communications, Inc.
American Cellular Network Company, LLC
Amcell of Atlantic City, LLC
Aurora/Elgin Cellular Telephone, LLC
AWACS Purchasing Company LLC
Cell South of New Jersey, LLC
Delaware Valley PCS Communications, LLC
Joliet Cellular Telephone, LLC
Kankakee Cellular L.L.C
Vineland Cellular Telephone Company, LLC
Ameritech Mobile Communications, LLC
Ameritech Wireless Communications, LLC
Cellular Mobile Systems of Michigan RSA No. 7 Limited Partnership
Century Cellunet of Michigan RSA No. 6 Cellular Limited Partnership
Century Cellunet of Saginaw MSA Limited Partnership
Century Cellunet of Southern Michigan Cellular Limited Partnership
Cincinnati SMSA Limited Partnership
Detroit SMSA Limited Partnership
Madison SMSA Limited Partnership
Michigan RSA #9 Limited Partnership
Milwaukee SMSA Limited Partnership
Thumb Cellular Limited Partnership
Toledo MSA Limited Partnership
GTE Mobilnet of Austin, LLC
GTE Mobilnet of Austin Limited Partnership
Houma-Thibodaux Cellular Partnership
7New York Holdings LLC
Cellular Retail Corporation
Pine Bluff Cellular, Inc.

Pacific Bell Wireless Northwest, LLC
Pacific Telesis Mobile Services LLC
SNET Mobility, LLC
Southwestern Bell Mobile Systems, LLC
Cellular One Group
Champaign CellTelCo
Decatur Cellular Telephone Company, LLC
Pacific Bell Wireless, LLC
SBMS Cellular Telecommunications Bloomington, LLC
SBMS Cellular Telecommunications Springfield, LLC
Southwestern Bell Wireless, LLC
Abilene SMSA Limited Partnership
Amarillo SMSA Limited Partnership
Corpus Christi SMSA Limited Partnership
Dallas SMSA Limited Partnership
Eastern Missouri Cellular Limited Partnership
GTE Mobilnet of Texas RSA #11 Limited Partnership
GTE Mobilnet of Texas RSA #16 Limited Partnership
Kansas City SMSA Limited Partnership
Lubbock SMSA Limited Partnership
McAllen-Edinburg-Mission SMSA Limited Partnership
Midland-Odessa SMSA Limited Partnership
Missouri 9B1 Limited Partnership
Missouri RSA 11/12 Limited Partnership
Missouri RSA 8 Limited Partnership
Oklahoma City SMSA Limited Partnership
Oklahoma RSA 3 Limited Partnership
Oklahoma RSA 9 Limited Partnership
San Antonio SMSA Limited Partnership
St. Joseph SMSA Limited Partnership
SWBW B-Band Development LLC
Abilene SMSA Limited Partnership
Amarillo SMSA Limited Partnership
Caprock Cellular Limited Partnership
Cellular Network Partnership, Limited Partnership
Corpus Christi SMSA Limited Partnership
Dallas SMSA Limited Partnership
GTE Mobilnet of Austin Limited Partnership
GTE Mobilnet of Texas RSA #11 Limited Partnership
GTE Mobilnet of Texas RSA #16 Limited Partnership
Houston Cellular Telephone Company, L.P.
Galveston Cellular Partnership
Galveston Cellular Telephone Company
Lubbock SMSA Limited Partnership
Midland-Odessa SMSA Limited Partnership
Missouri 1— Atchison RSA Limited Partnership

Oklahoma RSA 5 Limited Partnership
Oklahoma RSA 7 Limited Partnership
San Antonio SMSA Limited Partnership
South #5 RSA Limited Partnership
Texas RSA 1 Limited Partnership
Texas RSA 10B1 Limited Partnership
Texas RSA 10B3 Limited Partnership
Texas RSA 15B2 Limited Partnership
Texas RSA 18 Limited Partnership
Texas RSA 19 Limited Partnership
Texas RSA 20B1 Limited Partnership
Texas RSA 20B2 Limited Partnership
Texas RSA 3 Limited Partnership
Texas RSA 3-B2 Limited Partnership
Texas RSA 6 Limited Partnership
Texas RSA 7B1 Limited Partnership
Texas RSA 7B5 Limited Partnership
Texas RSA 8 East Limited Partnership
Texas RSA 8 South Limited Partnership
Texas RSA 8 West Limited Partnership
Texas RSA 9B1 Limited Partnership
Texas RSA 9B2 Limited Partnership
Texas RSA 9B4 Limited Partnership
Texas RSA No. 2 Limited Partnership
Texas RSA 10B1 Limited Partnership
Texas RSA 10B3 Limited Partnership
Texas RSA 18 Limited Partnership
Texas RSA 19 Limited Partnership
Texas RSA 20B1 Limited Partnership
Texas RSA 6 Limited Partnership
Texas RSA 7B1 Limited Partnership
Texas RSA 9B1 Limited Partnership
Texas RSA 9B4 Limited Partnership
Topeka SMSA Limited Partnership
Wichita SMSA Limited Partnership
Washington/Baltimore Celltelco Holdco, LLC
Washington/Baltimore Cellular Limited Partnership
Washington/Baltimore Cellular Limited Partnership
Worcester Telephone Company
Southwestern Bell Mobile Systems Long Distance, LLC
RAM Communications Group, LLC
Cingular Interactive L.P.
RAM/BSE Communications L.P.
Cingular Interactive L.P.
RAM/BSE Communications L.P.
Cingular Interactive L.P.

ATTACHMENT B

BELLSOUTH

WIRELESS, INC.

**Wireless Location for
Enhanced 911 Emergency Services
(E911)**

Industry Request for Information

March 1996

Questions relating to this document should be addressed, in the first instance, to :

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March 1, 1996

TO: Recipients of *Wireless Location for Enhanced 911 Emergency Services (E911)* Industry Request For Information

The enclosed Request For Information (RFI) invites your company to supply information about technology, products, systems, hardware, and software and ideas that BellSouth could employ to provide wireless caller location information for E911 emergency services. This information may relate to current or future offerings, including those under development or in the advanced stages of research.

The main thrust of this RFI is to determine the availability of the technology required to provide improved location capability for wireless E911 calls originating from cellular, PCS, SMR, or other wireless services. BellSouth Wireless, Inc. is seeking to facilitate the advancement of location technologies in commercial wireless systems by supporting key developments and standards and to promote requisite changes in intervening networks and public safety answering points to ensure full utilization of these capabilities.

BellSouth Wireless, Inc. recognizes the complexities and the challenges to be faced before the full benefits of improved wireless E911 location can be realized. Therefore, we are addressing this RFI to a broad audience that includes emerging and established companies in the fields of telecommunications, location, and public safety.

We appreciate your thoughtful consideration of this RFI and look forward to your response. Additionally, we see this RFI as a starting point for insightful dialog between BellSouth and the individual responding companies on this topic.



Attachment

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